

REMARKS/ARGUMENTS

Reconsideration and allowance in view of the foregoing amendment and the following remarks are respectfully requested.

Claims 1-11, 13 and 15 are now pending.

Claims 1-4 and 9-14 were rejected under 35 USC 102(b) as being anticipated by Thompson. Applicant respectfully traverses this rejection.

Claims 1 and 10 have been amended above to incorporate the limitations of claims 12 and 14 respectively dependent therefrom. Thus, the filter apparatus is limited to one comprising a fluid passage body that is a fluid inlet of an injector. Claim 1 further specifically requires that the filter include a closed end section integral with the filter section and shaped so that a cross sectional area between an outer surface of the closed end section and the inner surface of the fluid passage body gradually increases in a fluid flow direction. Claim 10 specifically requires that the closed end section be integral with the filter section and have no hole so as to disable the flow of fluid in an axial direction thereof.

Anticipation under Section 102 of the Patent Act requires that a prior art reference disclose every claim element of the claimed invention. See, e.g., Orthokinetics, Inc. v. Safety Travel Chairs, Inc., 806 F.2d 1565, 1574 (Fed. Cir. 1986). While other references may be used to interpret an allegedly anticipating reference, anticipation must be found in a single reference. See, e.g., Studiengesellschaft Kohle, G.m.b.H. v. Dart Indus., Inc., 726 F.2d 724, 726-27 (Fed. Cir. 1984). The absence of any element of the claim from the cited reference negates anticipation. See, e.g., Structural Rubber Prods. Co. v. Park Rubber Co., 749 F.2d 707, 715 (Fed. Cir. 1984). Anticipation is not shown even if the differences between the claims and the prior art reference are insubstantial and the missing elements could be supplied by the

knowledge of one skilled in the art. See, e.g., Structural Rubber Prods., 749 F.2d at 716-17.

In contrast to the invention specifically recited in claims 1 and 10, Thompson does not relate to a filter apparatus that comprises a fluid passage body that is fluid inlet of an injector. On the contrary, the filter assembly of Thompson is designed as and disclosed as disposed in an irrigation distribution system, so that the invention of claims 1 and 10 is not anticipated by Thompson. Furthermore, with respect to claim 1, it is respectfully submitted that Thompson does not disclose a closed end section integral with the filter section and shaped so that a cross sectional area between its outer surface and the inner surface of the fluid passage gradually increases. As understood from Figure 1 of Thomson, there is no integral closed end section defining a fluid passage body that increases gradually in the fluid flow direction. In fact it appears that the entire filter wall of Thompson is a perforated filter section. Although the end of the filter section of Figure 1 is closed, as described in the paragraph bridging columns 2 and 3 of Thompson, the end is closed by a separate cap 23 or by being sealed against lid 14. Clearly there is no disclosure of a closed end section integral with the filter section. Moreover, the closed end cap Thompson teaches in Figure 1 does not provide a gradual change in shape of the cross-sectional area of the fluid passage as required by claim 1.

The Figure 2 embodiment of Thompson does not teach the recited closed end section integral with the filter section either. In this regard, Figure 2 illustrates that the filter screen 18a has a closed end 22a and components 70 are spacers. Thus, there is no disclosure of an integral closed end and no disclosure of a gradual change in cross section area between a closed end section and the fluid passage body. Thus, neither the Figure 1 nor the Figure 2 embodiments of Thompson anticipate an integral closed end section as required in claims 1 and 10 and certainly does not teach a filter apparatus wherein the fluid passage body is a fluid inlet of an injector, as also now required by claims 1 and 10.

Claims 4 and 11 are also submitted to be different from and not anticipated by Thompson. Claim 4 specifies that each of the holes formed in the filter section has a diameter larger at the radially outer side of the filter section than at the radially inner side of the filter section. Although in paragraph 2 of the Official Action, the Examiner has characterized Thompson as disclosing a hole diameter larger at a radially outer side, with reference to column 3, lines 38-42, it is respectfully submitted that this section of Thompson provides no such teaching but rather simply states that the size of the perforations will be determined by the size of the material to be removed. There is no description or suggestion whatsoever of openings larger at one end than the other, so that clearly claim 4 is not anticipated by Thompson.

With regard to claim 11, claim 11 very specifically requires that the tubular fluid passage between the filter section and the inner surface of the fluid passage body have a cross-sectional area equal to or smaller than a sum of cross-sectional areas of the holes at the peripheral surface of the filter section. In this manner, fluid flow is regulated through the tubular fluid passage after passing through the holes. Consequently, pressure drop throughout the filter can be regulated by precisely manufacturing the outer diameter of the filter section and the inner diameter of the fluid passage body. Thus, each small hole in the filter section need not be precisely manufactured because pressure drop can be regulated by controlling the diameter of the filter section and the fluid passage body. Thus, variations in performance of the injector can be easily controlled. The Examiner has not addressed this limitation in the rejection. It is respectfully submitted that Thompson no where discusses any relation between the cross-sectional area of the tubular fluid passage and the sum of the cross-sectional areas of the holes.

Indeed, in contrast to the invention recited in claim 11, Thompson does not teach or suggest a relation between the cross-sectional area of the fluid passage and the summation of the cross-sectional areas of the holes. As shown in Figure 2, for example, of Thompson, the filter screen 18a and the container 11a form an annular

fluid passage that has a cross section that increases in the downstream direction. It can be seen that the cross-section adjacent the closed end 22a is largest and also perforations 42a are formed in the vicinity of the closed end cap. As a consequence, with the Thompson, it is very difficult to regulate the fluid flow in the cross sectional region around closed end 22a. Although the cross-section is smaller at the upstream end of the fluid passage between the filter and the fluid passage body, this cannot regulate the fluid flow downstream thereof.

In view of the foregoing, it is respectfully submitted that Thompson does not anticipate nor render obvious the relation between cross-sectional area of the tubular fluid passage and the sum of the cross-sectional areas of the holes as required by applicant's claim 11.

It is further respectfully submitted that Thompson does not teach or suggest features of applicant's dependent claims. In this regard, claim 2 specifies that the closed end section is approximately hemispherically shaped. First, it is submitted that Thompson does not even include an integral "closed end section". Furthermore, it is respectfully submitted that Thompson teaches only a truncated cone shape of the filter so that the distal end of the Thompson filter structure is in no way "approximately hemispherically shaped". Therefore, an anticipatory rejection over Thompson cannot properly be sustained. Claim 2 is not obvious from Thompson either as there is no motivation to modify Thompson to reconfigure the filter structure.

For all the reasons advanced above, reconsideration and withdrawal of the rejections of 1-4, 9-11, 13 and 15 is respectfully requested.

Claims 5-8 were rejected under 35 USC 103(a) as being unpatentable over Thompson in view of Glaser. Applicant respectfully traverses this rejection.

Claims 5-8 are submitted to be allowable over Thompson for the reasons advanced above with respect to claim 4. Indeed, Thompson does not teach nor in any

way suggest, in the combination claimed, holes in a filter section formed so that a diameter thereof is larger at a radially outer side of the filter section than at a radially inner side of the filter section. Thompson only teaches that the size of each perforation is determined by the size of material to be filtered. The Examiner seeks to overcome the deficiencies of Thompson with respect to the invention claimed by relying upon the secondary reference to Glaser. It is respectfully submitted, however, that one skilled in this art, without the benefit of hindsight knowledge of applicant's disclosure and claims, would not obviously combine Thompson and Glaser in the manner suggested by the Examiner. In this regard, Thompson discloses a filter assembly for filtering media suspended in water in an irrigation distribution system. Thus, one skilled in the art would understand that Thompson is designed in particular for the filtration of water. There is no concern in Thompson with regard to pressure drop or controlling the direction or rate of fluid flow through the filter media.

The secondary reference to Glaser et al is directed to a screen filter for use in a system for extruding polyolefins. The filter support is dome shaped and each of the flow passages defined through the shaped wall is oriented so that the longitudinal axis is perpendicular to the surface to the dome at the location of the hole. Figures 7-10 of Glaser illustrate various configurations of holes for the extruded material. At column 11, line 40-column 12, line 15, Glaser discusses the various configurations as providing particular advantages specifically relating to the extruded material. For example, the structure of Figure 7 is characterized as decreasing flow resistance to the extrusion material through the hole. The configurations of Figures 8, 9 and 10 are also characterized as reducing resistance to flow of the extrusion material through the hole. It is respectfully submitted that the skilled artisan considering the water filtration apparatus taught by Thompson would not consider the Glaser disclosure of a filter structure particularly adapted for passing polyolefin material for extrusion to be particularly relevant thereto, nor to teach or suggest that a change in the holes of Thompson would be of any use or advantage. In this regard, there is no teaching in

Thompson or Glaser that the concerns relating to turning of extrusion material approaching a hole and resistance to flow of a extrusion material through a hole would be of any relevance in an irrigation system wherein water, a non-viscous substance, is flowing. Indeed, it is respectfully submitted that it is only with hindsight knowledge of applicant's disclosure that the Examiner has proposed to modify the simple filter screen of Thompson for a water irrigation system in view of the filter for extrusion media proposed by Glaser.

It is clear that the initial burden of establishing a basis for denying patentability to a claimed invention rests upon the Examiner. In re Piasecki, 745 F. 2d 1468, 223 USPQ 785 (Fed. Cir. 1984). In establishing a *prima facie* case of obviousness under 35 U.S.C. § 103, it is incumbent upon the Examiner to provide a reason why one of ordinary skill in the art would have been led to arrive at the claimed invention from the prior art. Ex parte Clapp, 227 USPQ 972 (BPAI 1985). To this end, the requisite motivation must stem from some teaching, suggestion or inference in the prior art as a whole or from the knowledge generally available to one of ordinary skill in the art and not from applicant's disclosure. See, for example, Uniroyal, Inc. v. Rudkin-Wiley Corp. 837 F.2d 1044, 7 USPQ 2d 1434 (Fed. Cir. 1988).

As the CAFC has said, obviousness cannot be established by combining the teachings of the prior art to produce the claimed invention, absent some teaching, suggestion or incentive supporting the combination. ACS Hospital Systems v Montefiore Hospital, 221 USPQ 929, 933 (Fed. Cir. 1984). There must be a suggestion in the art relied upon to use what one reference discloses in or in combination with the disclosure of the other reference or references relied upon by the Examiner. In re Grabiak, 226 USPQ 870, 872 (Fed. Cir. 1986).

In view of the foregoing, it is respectfully submitted that it would not have been obvious, without the benefit applicant's disclosure, to modify Thompson in view of Glaser. Dependent claims 13 and 15 further underscore the unique combination


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provided by the invention in that the fluid passage body is a fluid inlet of an injector, which is also not taught or suggested by the combination of the Thompson and Glaser.

All objections and rejections having been addressed, it is respectfully submitted that the present application is in condition for allowance and an early Notice to that effect is earnestly solicited.

Respectfully submitted,

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